

CLAIMS

What is claimed is:

1. A multi-stage chopper amplifier (200), comprising:
an input chopper (104) a first gain stage (108) and a second gain stage (110) coupled in series, the first gain stage further coupled to receive input from the input chopper; an output chopper coupled to receive input from the second gain stage; at least one compensation capacitor (202, 204) coupled in a feedback pathway (118, 120) between the output chopper and the second gain stage; and a feedback chopper (112) disposed in the feedback pathway; wherein the feedback chopper is adapted to adjust the phase of the feedback pathway.
2. The multi-stage chopper amplifier of Claim 1, wherein the first and second gain stages are differential gain stages, and wherein the feedback chopper is disposed between the output chopper and the at least one compensation capacitor.
3. The multi-stage chopper amplifier of Claim 1, wherein a first compensation capacitor has a first terminal connected to a first input terminal of the second gain stage, and has second terminal connected a first output terminal of the feedback chopper; and wherein a second compensation capacitor has a first terminal connected to a second input terminal of the second gain stage, and has second terminal connected a second output terminal of the feedback chopper.
4. The multi-stage chopper amplifier of Claim 1, wherein the feedback chopper is adapted to adjust the feedback pathway by 180 degrees.
5. The multi-stage chopper amplifier of Claim 1, wherein the multi-stage chopper amplifier forms a portion of a delta-sigma data converter.
6. A circuit, comprising: a first chopper having a pair of input terminals and a pair of output terminals; a first differential amplifier having a pair of input terminals coupled to the pair of output terminals of the first chopper, the first amplifier further having a pair of output terminals; a second differential amplifier having a pair of input terminals coupled to the pair of output terminals of the first amplifier, the second amplifier further having a pair of output terminals; a second chopper having a pair of input terminals coupled to the pair of output terminals of the second amplifier, the second chopper further having a pair of output terminals; and a third chopper (206) having a pair of input terminals coupled to the output terminals of the second chopper and a pair of output terminals coupled to the

input terminals of the second amplifier; wherein the third chopper is adapted to adjust the phase of a differential feedback signal.

7. The circuit of Claim 6, further comprising at least one capacitor connected between a first output terminal of the third chopper and a first input terminal of the second differential amplifier; and at least one capacitor connected between a second output terminal of third chopper and a second input terminal of the second differential amplifier.

8. The circuit of Claim 7, wherein the third chopper is adapted to adjust the phase of the feedback signal by 180 degrees

9. The circuit of Claim 7, wherein the first, second, and third choppers are adapted to operate synchronously with each other.

10. The circuit of Claim 9, wherein the first, second, and third choppers comprise FETs.

11. The circuit of Claim 7, wherein the capacitors comprise FETs.